



EXTERNAL CAVITY LASER

BACKGROUND OF THE INVENTION

Field of the Invention

5 The present invention relates to an external cavity laser capable of oscillating a laser beam having a given oscillation wavelength by means of an optical fiber having the Bragg wavelength of light reflected by a grating adjusted to a given wavelength, i.e., a fiber Bragg grating
10 (hereinafter referred to as "FBG").

Description of the Related Art

Conventionally, some lasers of this type, such as the one described in U.S. Pat. No. 4,786,132, oscillates a single-wavelength laser beam with ^{the} use of an FBG in an
15 external cavity. One such laser appears in OECC '96 (First Optoelectronics and Communications Conference Technical Digest, July 1996, Makuhari Messe), 18P-18. This laser, using the FBG in its external cavity, has a so-called lensed-fiber arrangement such that an end facet of a fiber,
20 which is an optical junction to a laser source, is lensed.

According to this laser, the transmission quality of transmitted signals is evaluated by the signal-to-noise ratio characteristic. In the case of picture transmission, for example, the relative intensity of noise (RIN) is
25 adjusted to -130 dB/Hz [or more] ^{or less}. Thereupon, the inventors hereof conducted an experiment in which signals were transmitted under the following conditions using an apparatus model that is constructed in the same manner as the prior art example described in OECC '96, as shown in
30 FIG. 5.

This apparatus is a laser that has a multi quantum well structure, for example. The laser comprises a laser light emitting device 10 formed of a laser diode, for use